When I was in St. Louis, Convention Hall was filled to capacity each night with an "Old-Fashioned Revival" in which, according to the original plans, Negroes were to be segregated. The Negroes, with churches of their own to go to, objected so strenuously in their press, pulpits and mass meetings that the fence came down.

When, last winter, Negroes discovered that the American Red Cross refused to accept Negro blood, Negro opinion was promptly mobilized to fight the ban. After some weeks, the Red Cross partially revised its policy. Negro blood is now accepted, but it is segregated, presumably for Negro troops. Even so, it is a step forward in recognition of the Negro's right to share participation in common causes.

The Negro has learned in the past 25 years that by picketing the stores where he trades he can force them to hire colored help; that his meetings, petitions and hearings get him better schools and more recreational facilities; that lawsuits result in increased salaries for Negro teachers; that through union activity he can get more jobs at better pay; that the delegations he sends to Washington do, in time, produce slum clearance and housing projects.

Proof of what the Negro can do — collectively and on his own as a better-educated, better-trained American — is appearing from many quarters. Whether the Negro's aggressiveness will get out of bounds depends a great deal on the spirit with which the white man receives his legitimate aspirations. Much has been done in recent years by whites and Negroes alike to improve race relations. There is much more yet to be done. More deeply than ever before in his history, the Negro is sure that he has what it takes and can deliver. With such eagerness and such a faith, he does not believe that America will short-change him or let him down.

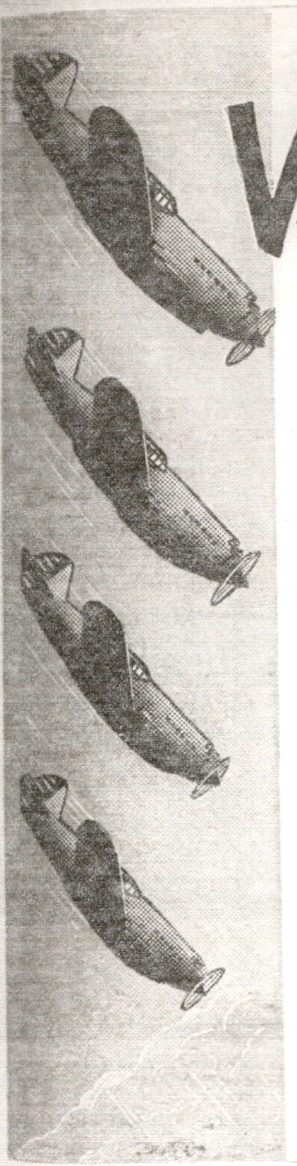
So That's How It Started!—26—

THE BRITISH built the first tanks in World War I with complete secrecy. Even the workmen who made them didn't know for what purpose they were being built. They were told the machines were to be used in Egypt for transporting large containers of water, and every record in connection with their manufacture was made under the heading "water carrier." Eventually the men in the factories adopted the word "tank" for brevity. The name stuck and is now used by practically all countries.

— Major Paul C. Raborg, *Mechanized Might* (Whittlesey House)

Reader's Digest, July 1942 (vol. 41)

BOOK SECTION



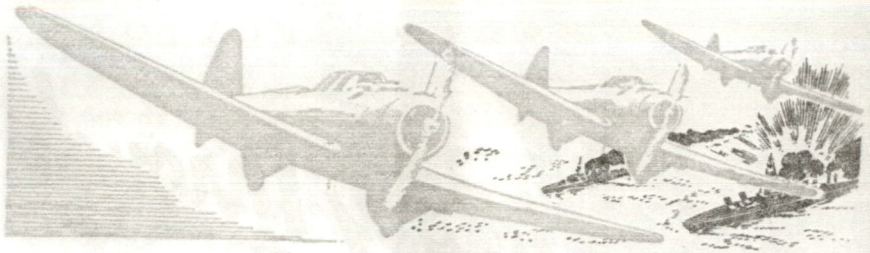
Victory Through Air Power

A CONDENSATION FROM THE BOOK BY

MAJOR ALEXANDER P. DE SEVERSKY

CHARLES BEARD, the historian, calls this "the most fascinating war book that I have read, and a more important book for Americans than all the other war books put together."

But *Victory Through Air Power* is also loaded with controversial dynamite. Harry Scherman, President of the Book-of-the-Month Club, introduces it to readers with these words: "Warning to Laymen: in reading this remarkable book about the air, keep your feet on the ground. Perhaps the kind of air strategy of which Major de Seversky is so brilliant an exponent is already planned and in process of execution on our side."



VICTORY THROUGH AIR POWER

IN OUR CONDUCT of the war we are committed, at this writing, to the creation of a super-*Blitz* mechanism — super-A.E.F.'s carried across the oceans by super-navies for old-fashioned campaigns to seize territory mile by mile. I submit that even though such a procedure may succeed, it will be disastrously costly in resources and man power. Why adhere to ancient warfare when air power is simpler and more effective?

Every mile of connecting lines, whether on land or on water, will have to be shielded by American aviation. Thus the battle of super-A.E.F.'s will become a struggle for domination of the skies. But if we achieve mastery of the air, why bother to send those colossal expeditions? How can enemy sea and land forces operate under skies held firmly by our air power? Why seek to smother the Axis and Japan with American bodies when we can bring into play our brain power and inventive genius?

This does not mean that we must cast aside older weapons. America is rich enough to duplicate weapons in the transition period, and we shall always need land and sea forces for occupation and policing. It does mean that we have not a moment to lose in constructing a striking air power. Only air power can carry an offensive war to the enemy, and only the offensive can win the war.

A realistic understanding of this new weapon has therefore become a condition of national survival. Our entry into the war was brought about by a humiliating defeat through enemy air power. The tragedy at Pearl Harbor, underlined by the subsequent sinking of the British battleships *Prince of Wales* and *Repulse* from the air, exposed the terrific danger for all to see.

In this new era of air power, a fleet is no protection. If the RAF were

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MAJOR ALEXANDER P. DE SEVERSKY, an authority on the tactics and strategy of aerial warfare, is also an outstanding aircraft designer. He commanded Russian air squadrons in the World War, lost a leg in a crash in 1915, but received special permission from the Czar to return to his command. He shot down 13 planes and was decorated many times. After the war he came to the U. S. and was appointed consulting engineer for the air service, becoming a citizen in 1927. He invented the first fully automatic bombsight and made many improvements in navigation instruments. He pioneered in high-altitude combat tactics by developing the first turbo-supercharged, aircool-engined fighter. He has made numerous other contributions to our air defense. He holds many speed records, and won the Harmon Trophy as 1939's foremost airman.

suddenly put out of commission, hardly a ship could reach England, for all that the British Navy could do. Whether Britannia's fleet can remain in the Mediterranean depends not at all on the size or skill of that fleet; it depends on who controls the Mediterranean skies. The usefulness of all navies is being rapidly restricted. Tomorrow, with the advent of true air power, the whole epoch of modern history conditioned by sea power will be ended. Under such circumstances rhetoric about "our impregnable ocean ramparts" becomes dangerous gibberish.

At the outbreak of the Second World War the United States lagged dismally in military aviation. Our planes, measured by the yardstick of military performance — range, armament, fire power, speed — were inferior to those of Germany and Great Britain. We cannot now meet the challenge of air power merely by undertaking to catch up. We must apply radical surgery, and prepare for undisputed first place.

Fortunately the rapid obsolescence of aeronautical equipment offers us the chance to reach out boldly beyond the present confines of aviation types. As far as the aircraft of tomorrow is concerned, all nations are starting from scratch. America is more richly endowed with the resources of brains, materials, personnel and industrial efficiency than any other country on earth. Whether it utilizes these potentialities depends on how quickly we comprehend the nature of the new weapon. We must not merely outbuild any combination of enemies. We must outthink and outplan them, in a spirit of creative audacity.

Air-Power Lessons

THE BASIC lessons concerning the new weapon of air power were laid down in three epoch-making campaigns during the first year of the present war. They were repeated and hammered home time and again during the following two years in other campaigns, but the main points have not changed. By briefly examining these campaigns — the invasion of Norway, the Battle of Britain, the conquest of Crete — we can read the axioms that will dominate the coming strategy of the air.

NORWAY: Hitler's invasion of Norway in defiance of Great Britain's overwhelming naval might gave traditional naval strategists their first real jolt of the war. After the first shock of Germany's northward intrusion, the democracies went through a period of fevered optimism. The Scandinavian peninsula was easily accessible to warships. Hitler's invasion must sustain itself across a 60-mile water gap. Old-line military commentators glibly estimated that Hitler's forces had in fact entered a trap.

And, indeed, there followed a series of British "victories" to bolster such forecasts. In initial skirmishes the British fleet inflicted notable damage on Germany's small navy,

and landed strong ground forces. Hitler seemed bogged; by all the old rules he should have remained bogged.

But those rules had been invalidated by the new element of air power. British naval forces had to withdraw in haste, to escape brutal punishment from the Nazi air arm. The German air force soon turned the water gap into a Nazi corridor, through which men and supplies could flow without hindrance. British fighter planes could not participate; the battle lay outside their flying range. And planes from British carriers were no match for land-based Nazi fighters, as the British discovered after heavy losses.

Thus the world's largest, most experienced, and most courageous navy, even with the help of its own aviation arm, failed utterly to block a hostile force in a water area — this against an enemy practically devoid of naval strength. Here was something startlingly new in the history of naval warfare.

BATTLE OF BRITAIN: The second surprising lesson — one which showed the limitations of Nazi air power — was furnished by the long ordeal of the Battle of Britain.

After the conquest of Western Europe, the terrifying Nazi war machine was confidently poised for a jump into the British Isles. The process was unconcealed. "Secret" invasions are the stuff of fiction: undertakings of that magnitude cannot be successfully camouflaged.

This time the water barrier amounted to only 20-odd miles; the impetus behind the engine was infinitely more powerful; the stakes were vastly higher; the Germans were ready to pay an exorbitant price for victory. The fateful jump now seemed even easier than at the Skagerrak.

Small wonder that things looked dark for England. Hitler's boastful optimism seemed fully justified. The British themselves were unconvinced of their own defensive might in the skies. They had celebrated the "miracle" of Dunkirk — during which RAF fighters, now within easy range of their home bases, had stood off Hitler's planes for four epoch-making days — without fully comprehending its significance in terms of air warfare.

Hitler's setback in the Battle of Britain teaches us a great deal about modern air warfare. Let us, therefore, examine the aerial weapons with which Britain and Germany confronted each other in the nerve-racked summer of 1940.

Germany was the attacker; her bombers would have to be escorted by fighters. If the fighters were successful, bombers could go about their duties unmolested; if not, their mission was doomed. The Battle of Britain was, therefore, a battle of fighter planes, and a comparison of the opposing fighter craft — the Spitfire and the Messerschmitt — gives a fair line on the quality of the two air forces.

The Messerschmitt 109's of that period developed 850 horsepower, and had about 330 miles an hour of speed. They had six machine guns — four in the wings and two firing through the propeller, with a consequent lowering of the rate of fire. The British Spitfire, still the most effective single-engined fighter in the world, had a speed of 370 miles and eight free-firing machine guns in the wings. It had a considerable margin in speed, better armor, two more machine guns, and somewhat better flying qualities.

But if the British had the advantage in quality, the Germans had a formidable numerical preponderance. There are no accurate figures, but an estimate of 3000 Nazi fighters against 1200 British seems reasonable. Both sides had more, but these were roughly the units thrown into the battle over southeastern England.

Since this action was an attack on Britain, British offensive bombers did not figure much in its outcome. The fighting quality of the German bombers, however, was highly important. Should they lose their fighter escort, could they fight their way to their targets and home again?

The basic ingredient of the *Luftwaffe* was the Stuka dive-bomber. This plane has registered on the popular imagination more deeply than any other thus far exhibited in combat. It was the most conspicuous element of the fearsome *Blitzkrieg* that smashed continental Europe. Yet it failed completely over Britain, because it was designed as *an auxiliary to the ground forces*, and not as a purely air-power weapon.

The Stuka is an all-metal, low-wing monoplane with a top speed of 240 miles an hour — 130 miles slower than its nemesis, the Spitfire. When attacked from the rear, it had only one gun to turn against the Spitfire's eight; attacked from below, it was wholly defenseless. The Stuka's inadequacy in defensive fire power was typical of other German bombers — the Junkers, Heinkels and Dorniers — used over England.

The insufficient defensive armament on all these aircraft was a principal cause of Germany's defeat in the Battle of Britain. Indeed, as a mainstay of the *Luftwaffe*, the Stuka is a symbol of the essential lopsidedness of that service. The Germans had overrun a continent by creating the nearest thing to real air power the world had yet seen. But German vision and audacity failed to go far enough.

The Battle of Britain, an Air Ministry pamphlet, distinguishes four phases in the epochal struggle: The attack along the Channel coast; the bombing of inland fighter airdromes; the mighty attack on London; and finally, night bombing flights over the entire country. Without apparent cause, it seemed, the conflict kept entering a new phase without having completed the preceding phase. But now we have enough details to analyze what happened.

I am convinced that the failure of the first all-out effort to capture the southeast segment of English sky astonished and shocked the Germans. The startling loss of this gamble, throwing doubt on their fundamental strategic ideas, left the Nazis as bewildered as the French had been by the crumbling of their Maginot Line strategy. Far from adhering to a rigid program, the German High Command was forced to improvise in an almost panicky spirit as it went along.

In this first phase, Göring threw his Stukas, Dorniers, Junkers, Heinkels and Messerschmitts into the enterprise unsparingly. He lost at least 697 aircraft in the first ten days. He was willing to pay any price for that invasion bridgehead.

When Messerschmitts showed themselves unable to eliminate the British Spitfires and Hurricanes by battles in the air, the attack entered the second phase by attempting to bomb them on the ground. The Germans assumed that the RAF fighter command, being chiefly concerned with the defense of the coastline, would be concentrated within easy reach, their airdromes packed tight with aircraft. But the RAF had profited from the experience of the Polish and the French airmen. Instead of bunching their planes they wisely dispersed them, singly and often under camouflage. Thus, even though some airdromes were put out of action, the fighters were not destroyed. And when they rose to attack, the underarmed German bombers were like so many clay pigeons for British aerial gunners. In this second phase the Nazis lost at least 562 aircraft at a cost of only 119 to the British.

Failure to eliminate British air power meant that the German invasion program was doomed. Hitler's High Command had planned a lightning invasion. Instead the Germans unexpectedly faced a prolonged all-air struggle, for which they were not equipped. An all-air struggle it has remained throughout, with the armies and navies on both sides reduced to the role of impotent spectators. The German engine of war could not leap over the narrow waterway for the same reason that it could not prevent the evacuation from Dunkirk: the RAF planes were of superior quality. That one fact changed the course of human history.

Marshal Göring's *Luftwaffe* now began the third phase with an attempt to destroy London. This assault resulted in a wholesale slaughter of the attacking German aircraft. For a while the Nazis tried to maintain their morale by concealing the magnitude of their losses from the *Luftwaffe* personnel. For instance, pilots were ordered to land at airdromes other than those from which they had taken off, so that they would be unable to check up on the casualties. But the mounting destruction finally undermined the self-confidence of the leaders and the attack on London was called off.

There is strong reason to suppose that the all-out assault on the British capital, if it had been kept up a few weeks longer, might finally have succeeded. In the long run, overwhelming mass and continuity of action have their effect. The RAF pilots were brave and skilled, but relatively few and overworked beyond human endurance. It is possible that they might not have held out another 30 days of unrelieved bombardment. But Göring saw his aerial armada being whittled down alarmingly, while he had no way of estimating its effect on the enemy. It is possible that he stopped the offensive just in time to nullify his whole investment.

Because daylight losses of their underarmed bombers were so great, the Germans were, in the last phase, restricted to the comparatively ineffectual night hours. The destruction accomplished in night raids from very high altitudes may be enormous. But the aim is haphazard, and the methodical annihilation of specific targets essential for victory is almost impossible. The hope of cracking British morale by hit-and-miss tactics soon faded.

Thus seven years of Nazi concentration on aerial preparedness ended in fiasco. The all-out air attack had, it is true, killed some thousands of Englishmen, wrecked a vast amount of British property, destroyed some RAF planes and pilots. But strategically it had got Hitler nothing. And the losses in German planes had been staggering.

On the basis of the Battle of Britain, a good many military students in America jumped to the rash conclusion that air power alone cannot achieve a definitive victory. This is a dangerous error. The fact that the Germans failed to knock out England from the air decidedly does not mean that knockouts from the air are impossible. It means only that Germany built the wrong kind of planes to do it. It was a failure not of air power, but of German vision.

The Germans did build a plane, the four-engined Condor, which flew from Berlin to New York nonstop, carrying 20,000 pounds of gas. The same plane would need only 5000 pounds for a round trip from the French coast to London. The difference of some 15,000 pounds might have been used for defensive fire power, with enough margin for an explosive load five times as great as the bombers used over Britain. Had Hitler foreseen the need, he could have built an armada of such bombers. Had he done so, the story would have been quite different.

The lessons of the Battle of Britain have not been lost upon the Germans. We must assume that they are putting all their energies behind a far-reaching revision of their *Luftwaffe* to make it a real instrument of air power. That revised air force is the one we shall have to defeat. Certainly victory cannot be won by imitating, as our own air program now does, the same *Luftwaffe* that failed over Britain.

CRETE: With the Battle of Britain stalemated by the qualitative advantage of the Royal Air Force, the center of the conflict shifted to the Mediterranean Sea, which British sea power had dominated for generations. Under the hypnotic spell of their routine reliance on naval forces, the British made a disastrous error in failing to prepare Crete for an all-out aerial defense. After all, couldn't this small island be completely covered by the mighty guns of the British Navy?

The answer came when at least three British cruisers, one antiaircraft cruiser, and six destroyers were sunk, while two other cruisers, two battleships, and some destroyers were badly damaged. Over a quarter of a billion dollars' worth of naval force was lost or damaged — the economic equivalent of about 5000 airplanes! The fact that only one Axis warship, a destroyer, was lost indicates that Axis naval forces were practically not involved. In the history of modern warfare Crete will remain a milestone of all-air invasion. Not only troops but supplies, fuel, ammunition, reinforcements, everything was brought by the air routes and the whole area was covered by air power.

So naval power suffered one more defeat from air power. In the battle another prime lesson was underlined. Despite a desperate need for aviation strength over Crete, British aircraft carriers were not used. Why? Because the British had learned off Norway and elsewhere that ship-based planes are committing suicide if they fight a duel with land-based planes, and that the carriers themselves are exposed to disaster if brought within range of land-based enemy air power. In the epoch of aviation the British Navy could not use its aviation adjunct. Neither will the American Navy ever be able to use its aviation adjunct — except in regions out of touch with the enemy's powerful land-based air force.

The German success in Crete was widely heralded as a rehearsal of an invasion of the British Isles. The German Ministry of Propaganda took advantage of popular innocence in strategic matters to claim Crete as a "proof" that the same would soon be done to England.

German military leaders did not share Dr. Goebbels' views. The victory had once again proved that securing command of the skies is the first step in an invasion across a water gap. That is precisely what it had attempted to do, without avail, in England.

To us airmen Crete stands as a classic battle. It established the validity of the new military order. Together with the Battle of Britain, it disclosed the fundamentals of aviation strategy. That strategy may be expanded and intensified by better equipment, but the basic principles are likely to remain unaltered. Crete showed air power not only as a direct striking force, but as a self-contained military force — the only one able to operate alone, as well as to give powerful support to surface forces and to provide the most expeditious transport of man power and the implements of war.

Air-Power Lessons for America

CERTAIN basic truths about the new military relationships have become apparent from this summary of recent experience. The lessons of air power are implicit both in the things aviation has done and the things it failed to do. The least we Americans can do is isolate those lessons, learn them thoroughly, and make the fullest use of them. They have been demonstrated for us as in a gigantic laboratory, at enormous cost in life and substance. Here, without excessive technical embellishments, are the most significant of them:

1. *No land or sea operations are possible without first assuming control of the air above.*

This has become the fundamental axiom of the new strategy. Those who still would send battleships or land units into action under skies controlled by the foe cannot be trusted with authority in modern war.

2. *The blockade of an enemy nation has become a function of air power.*

Britain has learned the hard way that blockade, heretofore preëminently the task of sea power, has been taken on in ever-larger measure by air power. Though practically without a fighting fleet, Germany has been able seriously to hamper the flow of supplies to England, intercepting British commerce and men-of-war many hundreds of miles to the west of Ireland. As Hitler's bombardment and fighter aircraft extend their range, this threat to British shipping will grow, unless it is canceled out by counter-aviation.

3. *Only air power can defeat air power.*

The hope that antiaircraft artillery, balloon barrages, or other improvised terrestrial defenses on land or on ships could form a positive protection against attack from the air has been largely abandoned. Such devices can confine the enemy to higher altitudes, thereby reducing the accuracy of his aim. But the only defense against the menace from the skies is in the skies.

The notion that ships can carry their own defenses against hostile aircraft is no longer seriously defended. Despite its first-class antiaircraft fire power, Britain's *Illustrious* was put out of action by bombing planes. The German battleship *Bismarck* could not ward off aerial torpedo attacks. Nor could Britain's *Prince of Wales* and *Repulse* or Japan's *Haruna* drive off aerial destruction.

4. *Land-based aviation is always superior to ship-borne aviation.*

The airplane taking off from an aircraft carrier or other "floating base" is of necessity encumbered with special prerequisites which are built in at a heavy cost in perform-

ance. This condemns the ship-borne plane to relative inferiority.

The carrier or floating airdrome provides, on the average, a landing space 100 feet by 750 feet. For contrast, the latest airdrome on *terra firma*, at Newfoundland, has a concrete runway 1200 feet wide and 10,000 feet long. The heavy bombing plane of the immediate future, patterned after the Douglas B-19 or the Martin Flying Boat, will have a span of 200 feet, or twice the beam of the average carrier.

5. *The striking radius of air power must equal the maximum dimensions of the theater of war.*

Range deficiency has been the curse on Hitler's aviation. At every step of his numerous conquests he has had to pause and set up new "stepping stones" to make up for lack of range.

In relation to the Pacific, our own aviation was even more backward. To dominate the water gaps between the islands of the southwestern Pacific, our air force — bombers *and* pursuits — should have had a striking range equal to the largest water interval between any of the islands from Hawaii to Japan. As long as we lack this minimal air force, we shall be gravely handicapped.

6. *In aerial warfare, quality is relatively more decisive than quantity.*

"Just planes" are not enough. Hitler and Göring counted confidently on overwhelming the RAF by sheer weight of their aviation equipment. Our aviation reverses in the Pacific were not, as popularly supposed, the result only of Japan's superiority in numbers. Press dispatches have described Japanese fighter planes powered with engines of 1675 horsepower, and carrying two 20-mm. cannons in addition to light machine guns. As against the American type apparently most extensively in use, the P-40, the enemy thus had an advantage of about 500 horsepower, which meant all-around better performance, besides the explosive action of 20-mm. cannon shells entirely lacking in the P-40. Had we possessed superior quality we might have upset the Japanese air potential notwithstanding our quantitative handicap.

Attention to this principle is of special value to Americans. Because of our national talent for mass production and standardization there is the danger that we may "freeze" our aviation models too soon and too rigidly. In one sense Britain benefited from its delay in building air power. Having entered the production race late, it was able to incorporate the results of later aerodynamical knowledge into its pursuits, whereas Hitler's fighters had been "frozen" for mass production years earlier.

The leverage of quality is something which we in America, in particular, should exploit to the limit. It is important to note that every time we double quantity we double the investment in American lives; but every time we double efficiency, we reduce that investment in lives. We have the engineering skills and inventive capacities to enable us to place reliance on superior performance — where it belongs — rather than to attempt to smother enemies by a mass investment of equipment and lives.

7. *The principle of unity of command, long recognized on land and on sea, applies with no less force to the air.*

The air is not a part of the surface which it covers, but an element as distinct as land or sea. The absurdity of split command in the air was revealed for all but the blind to see in the first weeks of the war in the Pacific. The Japanese aerial offensive on Hawaii came as a single and continuous operation. Yet two different and almost unrelated air forces rose to meet the challenge: army aviation and naval aviation, each trained in a different military tradition, in different tactics, through different maneuvers. Even if one man were put in command of these duplicate units in the actual fighting, he would still deal with two forces having different military characteristics and personnel steeped in different military ideas.

Was the defense of the skies over Pearl Harbor to be regarded as merely a naval show, with the Army aviation grounded? Was the defense of the skies over the near-by Army base, Hickam Field, to be left to the Army aviation? Or were the two services expected to hold a conference to solve jurisdictional puzzles? If the New York area is hit from the skies, will the defense fall to the Navy's air arm at Floyd Bennett Field or to the Army's air arm at Mitchel Field?

There can be no artificial line at which one aerial command bows out politely while the duplicate command takes over. Imagine the Battle of Britain if the Royal Air Force had been split into segments, one under the Admiralty and the other under the Army! That is precisely the situation which we face as long as we lack a homogeneous air force, under a single command.

10. *Air power must have its own transport.*

Aviation dependent on slow-moving surface communication lines for its supplies and replacements is an anomaly. It is ludicrous to make an air force, moving at 300 or more miles an hour, dependent on transport crawling along at 10 or 15 knots. That is the case today in the Pacific, where our air forces have been hamstrung because they have had to rely on slow and uncertain sea communications.

The American aeronautical industry for years pressed upon the War Department plans for long-range cargo planes, long-range pursuit and convoy fighters. They saw the coming need for equipment that could reach all our outlying possessions under its own power. These proposals were always arbitrarily dismissed as farfetched. Yet by this time it is obvious that air power must be fully self-contained. It must rely on its own transport, being geared to

carry with it at all times reserve equipment, reserve supplies, and also, when necessary, troops through the air.

The Ordeal of American Air Power

IN THE LIGHT of these lessons of air power, the present state of our military aeronautics is far from comforting. For that very reason it must be faced unflinchingly. The sooner we face it, the healthier for our future. For years the American people have been lulled into the belief that their military aviation was superior to any in the world. Such self-delusions are as dangerous as enemy attacks.

In presenting the bare facts without prettifying them, I am fully conscious that my case implies serious criticism of the established military order. But it is not a question of blaming individuals. It is a question of getting at the causes of past blunders.

The illusion persists that Germany's air force caught the world unawares. This is a convenient excuse for American backwardness, but it happens to be untrue. Germany did not unfold a single technique of aerial warfare which was not thoroughly familiar to aeronautical experts. They had seen the Nazi aviation equipment in action in Spain, at maneuvers, and on display in Germany.

Lack of numerical strength on our part can perhaps be justified. Seeing no immediate prospect of war, we did not regard a huge aviation inventory as necessary. But there can be no justification for our lack of qualitative factors. The small size of our air force does not explain why our pursuit planes were ordered with two machine guns, when other nations were building them with eight. Where Europe had strong armor, we had none. When other countries were providing bulletproof and leakproof gasoline tanks, we did not. When Britain had four-gun turrets in bombing planes, American bombers were either pathetically underarmed, or so ill-constructed that they could not use their full fire power. It required the immeasurable tragedy of another World War to bring the startling disclosure that we had practically no *military* airplanes.

Now, our gigantic production program is in full swing. Already we possess a variety of aircraft that comprise a first-rate naval arm, and an amorphous mass of Army planes with great latent possibilities. But even this brings us no nearer to genuine air power. We are merely building weapons for the Army and Navy. True air power depends upon unified air strategy.

The blunt fact is that our high military authorities were blind to the need for aviation development. In England and Germany the development of air forces was taken out of the hands of army and navy people and given to men attuned to the free-ranging nature of aviation. But in America the same men responsible for the woeful backwardness of our military aviation are still in control. As long as the system responsible for our weakness in the air remains, there can be little hope for world leadership in military aviation.

It should be emphasized that this blindness does not extend to the majority of our military aviation personnel; no finer body of men has ever been assembled. They have chafed under the artificial restraints imposed upon them.

On March 12, 1942, a dispatch from Burma by foreign correspondent Leland Stowe quoted an American pilot as follows: "Once we've got planes that are just as good in every way as anything the Japs or Germans have, we'll really begin to hand up some records. And once they give us planes that are just a shade better — well, brother, I just want to be in on it. But it's got to happen faster than anything ever happened in America before. I hope to God the folks back home know how much it will mean to us out here."

Another dispatch, this one from Java: "Planes arrived, especially heavy United States bombers, which proved to be formidable weapons. But without sufficient fighter protection for the airfields, their value continually decreased. The fact that the fighters on hand were not of a quality sufficient to fight successfully against the excellent Japanese material made itself especially felt. Not only did their offensive power decrease, but the operations of the heavy bombers became riskier."

These are more eloquent pleas for quality in our aviation than I can attempt. It does tear at one's heart to realize that such a spirit, and precious American lives, are being endangered and wasted through inferior aviation equipment.

Our fighting men of the air services know that the very people who rammed inferior equipment down their throats are still in charge of the situation. We should follow the example of England and clean house at the top — not in the tactical units, but among those who were directly responsible for procurement before the war emergency.

Possession or Elimination

WITH THE ADVENT of air power it is possible, for the first time, to reduce an enemy nation to helplessness without the time-honored preliminaries of invasion and mile-by-mile conquest.

In the final analysis, the aim in armed conflict is to disarm the enemy. Until the advent of air power, this could be done only by armies, with navies to provide and protect transportation. Air power revolutionized human conflict in that it provided the means to disarm an enemy directly — by knocking the weapons out of its hands through the destruction of its entire war potential.

As the full potentialities of air power are unfolded — and we have seen only the crude beginnings —

the first question in relation to any specific campaign, will be: *Does the attacker aim at the possession of the enemy country, or at its elimination as an economic, political and military factor?*

In the conflict between Great Britain and Germany, we see a war of elimination. Because Hitler cannot hope to enslave and exploit the British nation, he is more interested in destroying the British Isles than in acquiring them.

The Nazis tried to invade England only because they had not yet realized the possibility of destroying it, and had not prepared for the task. Without doubt they now recognize that with the appropriate weapons they might have obliterated the industrial resources of the British Isles. What they did to Rotterdam and Coventry and Belgrade, they will try to do — unless stopped in time — to the islands as a totality.

Russia presented quite another problem. The primary aim was to take control of Russia's natural resources. General strategic bombardment of the nation as a whole was therefore withheld, and only tactical obstacles immediately in the path of action were demolished from overhead. Hitler wished not merely to knock out Russia but to take its riches as nearly intact as possible, ready for immediate and intensive exploitation. In such a war the hitting strength of air power is deliberately held back, which explains why the German *Luftwaffe* played a lesser role than had generally been foreseen. This is an example of the war for possession.

Obviously the war of possession is more difficult, more costly in man power, more hazardous for the nation undertaking it. The hardships increase enormously as the distance from friendly primary bases is lengthened.

That fact should not be overlooked by those who think only in terms of great invasions of regions all over the world by American man power. Such undertakings, sprawled through many parts of the globe, would be dependent on supply channels much longer and much more difficult to defend than Germany's lines into the interior of Russia.

Japan's war against the Allies is clearly a war of possession. In China the Nipponese have sought to take over territory and potential resources "for keeps." The Island Empire is seeking conquest of the sources of oil and rubber and other essentials in the East Indies and the British and American possessions.

At our end, on the contrary, that war should be of an entirely different character. There is nothing on the Mikado's islands that we wish to possess and to use; we entertain no dreams of conquest. We are concerned simply with the elimination of a menace. So it is a war of elimination that we should have planned and built for.

It is clear as day that had our strategy been based on dominant air power, we would have answered Japanese aggression with immediate all-out aerial bombardment of the Japanese islands and their surrounding waters. Alaska, with direct access to all the resources and man power for self-contained air power, would have been set up as an aviation stronghold. Japan would thus have been under the terrifying threat of direct onslaught from a main base of well-nigh inexhaustible air power.

As far back as 1929 General Billy Mitchell wrote that "Alaska is really the key point to the whole Pacific." Alaska, he pointed out, "is within striking distance of any place we want to approach in Asia, either commercially or in a military way." I often discussed the details of the strategy involved with General Mitchell personally. His vision and intuition have been completely vindicated by history.

A strategy based on air power is unquestionably indicated for us in the Pacific. That in turn calls for aircraft, organization and leadership thoroughly cured of inherited naval obsessions. As a concession to public opinion and to obvious day-to-day events, we have been improving our aircraft, making them more efficient, longer in range, better armed. But in relation to our tactical needs in the Pacific, we remain unprepared and backward — more backward than were the Germans for their war of elimination against the British Isles. At least the Germans were able to reach their objective.

Victory Through Air Power

THE WAR in the Pacific — the war America can and will win — has begun most inauspiciously. Pearl Harbor, Manila, Hong Kong, Singapore and Java are milestones of disillusion. The underestimate of Japan's strength and ingenuity was the least of the illusions. The greatest was the overestimate of the role of sea power. Within a few weeks after the attack on Hawaii, the Pacific floor was littered with Allied and Japanese warships — all but a few of them killed off by airplanes. The $400,000,000 naval bastion at Singapore turned into another Maginot Line. Neither sea forces nor ground forces could turn off invasions launched under the shield of superior aviation. The desperate cries for help from every front called neither for ships nor troops nor tanks, but only for planes — more planes and better planes.

But the terrible losses of these cruel months will not have been in vain if they help to clear the mind of America of the bankrupt concepts that this is a naval war.

The Justice Roberts report on Pearl Harbor pointed to negligence and lack of coördination. These are human failings which can be quickly remedied. The really sinister passages were those indicating quite clearly that the responsible officers did not take the threat of air assaults seriously.

A month after Pearl Harbor we

had new proof of this. In asking Congress for additional billions, a ranking naval officer declared that the investment would help America "gain command of the sea by destruction of the enemy's seagoing forces." To get some inkling of the emptiness of that remark, assume that we actually succeed in annihilating "the enemy's seagoing forces." Then let us inquire whether that action would, in fact, give us "command of the seas." Would it enable our battle fleets to steam boldly into Japanese waters and bombard the Mikado's harbors, submarine bases, and coastal fortifications? Certainly not. As long as Japan has reasonably effective air power, such intrusion within the radius of its shore-based aviation would be suicidal. The fact is that destruction of Japanese sea power would leave us approximately where we were, as long as Japan retained sufficient air power to control the skies.

Admittedly it is risky business to deal with immediate aspects of the war at a time when events move so much faster than printing presses. Yet it is possible to make certain broad generalizations on the strategic picture.

The irony of our war with Japan is this: Although the body and heart of the enemy are closer to our American mainland than any of his outlying limbs, we are grappling with those limbs and cannot strike at his heart. We have come to grips with Japan in the Philippines and Malaya and the Netherlands Indies, which represent, in terms of safe roundabout supply routes, distances from 7000 to 12,000 miles. This despite the fact that the enemy himself lives a scant 3000 miles from Alaska, some 2000 miles from Aleutian Island bases.

What might have been — and what ultimately must be — a conflict across 3000 miles has resolved into a conflict across 12,000 miles!

To grasp the strategic outlay, think of Japan as a great octopus. If we were able to strike at the heart of this sprawling beast, at Japan itself, and knock it out there, all the tentacles would instantly fall limp, and relax their grip on victims already crushed or struggling to survive.

We are now engaged in the laborious and costly task of hacking away at each of the tentacles. Americans, heirs to the greatest industrial civilization in the world, are reduced to fighting with primitive weapons in swamps and jungles, matching man for man and seeking to smother the enemy by the bulk of American bodies and machines. It is as though we had deliberately cast aside our natural advantages, discarding the very weapons that reflect our industrial and technological supremacy.

In effect we are trying to take over command of the entire Pacific basin — half a world! — piecemeal, in order that, thus entrenched, we may then prepare to carry the war to the vital organs of the octopus in the Japanese homeland.

I submit that it makes no sense. The sooner we supplement this strategy by preparing for direct aerial assault on the heart of the enemy the better. Let us forge the new weapons without delay, meanwhile giving the present strategists all they ask for in the conduct of the immediate phase of the conflict.

If even a fraction of the materials and man power and creative genius now earmarked for expansion of the old weapons were diverted to true air power, we could construct the machinery for the shortest and most direct road to victory.

There are those who denounce such a proposal as "gambling" with the nation's security by "venturing into the unknown." The truth is that the orthodox strategists — dependent on their surface lines of communication — are the real, if unconscious, gamblers. They are staking the whole war on the hope of beating Japan in a race for bridgeheads and way stations. To this extent they are right: if we lose those bridgeheads, our whole prodigious investment in ships and short-range aviation becomes useless.

Air power would have to pick up the job from there. Does it not seem, therefore, simple common sense to begin immediately to gear air power for that job. Specifically it is imperative that we undertake immediate construction of a fleet of superbombers of the Douglas B-19 and Glenn Martin Flying Boat *size*. These have a range of nearly 8000 miles. Japan is within a 3000-mile radius of Alaska.

Most Americans are familiar with the main facts about the new Douglas B-19 and the Glenn Martin flying boat. It is true that they were conceived some time ago, as purely aerodynamic experiments, without planned relation to practical employment in warfare. They therefore have neither the speed, armor, nor guns to make them true dreadnaughts of the skies. But as a preview of the great ranges now possible and the greater ones still to come, the B-19 serves its purpose. Such a plane could leave New York or Alaska, bomb an objective in Japan or Europe, and return to its base.

The American aviation industry can now surpass the best available elsewhere. Mr. Glenn L. Martin stated in February, 1942, that his firm "can build a 250,000-lb. flying ship, able to carry 80 tons of bombs or cargo to Europe at a speed of more than 300 miles per hour *at any time that there is a demand for it.*" It is not technique but strategic thought that lags so sadly in our country.

While these bombers operate from the primary base on Alaska, their accompaniment of convoy fighters could start from Aleutian bases a thousand miles farther west. At the outset the convoy combat planes would therefore be of considerably shorter range. The two types together would give us a well-balanced

striking force fit to attack Japan, not evading but seeking combat.

If the construction of this aerial striking force begins in 1942, it could be planned for action in 1945. If some naval leaders object that this would be "too late," remember that their own construction program cannot reach its apex until 1948.

IMMEDIATE preparation for direct aerial attack on Japan, and ultimately on Germany as well, does not imply a cessation of the struggle with the forces now at hand. The most important thing that an Air Department could do immediately, while launching the program for long-range combat, is release our existing aviation from its dependence on surface transportation. At this stage of aeronautical science it is absurd that our aircraft should be taken apart and loaded on ships and dragged across vast oceans in constant dread of attack from undersea, on the surface, and from on high.

The same aircraft can be modified for self-delivery to Hawaii, Iceland and Africa. Nearly 200,000 aircraft are planned for production in 1942–3. If the greater part of these, as well as the craft already built, were equipped with a minimum range of 3000 miles, avenues of operation now closed to us would suddenly be wide open. The terrible drain on our heavily burdened shipping facilities would cease.

One of our significant advantages at this writing is that both Japan and Germany have their hands full with tasks which may hamper their concentration on aerial weapons for direct attack on the United States. The present strategy therefore serves as an effective *delaying action*, winning for us valuable time. But whether in the Atlantic or in the Pacific, we shall ultimately face the necessity of striking at the sources of the power which we wish to crush — that is to say, Japan and Germany proper. The main problem is to seek and find a road to the heart of the enemy.

There can be no doubt that the native common sense of the American people will assert itself in time to switch our major strategy onto the wings of modern warfare. The nation will suddenly thrill to the realization that precisely because this is essentially an aerial war, we Americans will have the upper hand. Recognition that the conflict must be won or lost in the "air ocean" is being brought to us in the language of frustration and defeat on the surface of land and sea. But the bigger message is one of inevitable triumph.

Americans invented the air weapon, and they are its natural masters. They have never developed it destructively, but now that it has been turned against them they will reclaim their technological priority. Once fully alive to their advantage, they may be expected to take the initiative in this war. They will no longer wait to be stunned and bewildered by enemy surprises or content to let the enemy establish all

the "precedents." They will settle on a policy of audacity, with men of great vision and uninhibited imagination at the controls.

We have already heard, and may hear again, dire warnings that should Australia and the British Isles fall the United States would be finished. The falsity of such views is evident as soon as the landscape of events is surveyed from the eagle's view of real air power. Such military disasters, the tragedy of which we do not for a moment underestimate, will not overtake us if air power is given full rein. But even if they did, they would not spell doom to us airmen. We would regard them as passing stages in a planetary conflict which cannot end as long as we possess air power to battle for mastery of the skies.

THIS BOOK has been in large part a chronicle of American error and shortsightedness and stubborn orthodoxy. But its moral is not despair. On the contrary, its message is one of soaring hope — *Victory Through Air Power.*

America's aerial potential is so clearly greater than that of the Axis that in the race for supremacy in the skies victory is assured. But we must bear in mind that the differential is being rapidly reduced as the Germans and the Japanese lay hands on new sources of supply. Hence the immense importance of acting now. Tomorrow it may be a race between approximate equals; today our margin of superiority guarantees success.

Air power is the American weapon. It will not fail us.

A Prayer

OUR FATHER, as we look out upon a world in which all things seem to be shaken, we thank Thee for the assurances which come to us from the past. We praise Thee that truth crushed to earth has always risen again; and that in the long last, ruthless might has always been self-defeating and self-destructive . . . and that though love has been crucified, dead and buried by hate, always it has come to life again. And so, we thank Thee for the lift of a long look back, and the lift of a long look ahead.

— Dr. Albert G. Butzer